

Abstract

5 The present invention makes available a method for inducing neuronal differentiation and preventing the death or degeneration of neuronal cells both *in vitro* and *in vivo*. The subject method stems from the unexpected finding that, contrary to traditional understanding of neural induction, the default fate of ectodermal tissue is neuronal rather than mesodermal and/or epidermal. In particular, it has been discovered that preventing or antagonizing a
10 signaling pathway in a cell for a growth factor of the TGF- β family can result in neuronal differentiation of that cell.